

### ABSTRACT

The invention provides isolated nucleic acid molecules, host cells that contain an isolated nucleic acid molecule, and substantially pure polypeptides. For example, the invention provides isolated nucleic acid molecules that encode polypeptides having mu3 opiate receptor activity, host cells that contain an isolated nucleic acid molecule that  
5 encodes a polypeptide having mu3 opiate receptor activity, and substantially pure polypeptides that have mu3 opiate receptor activity. In addition, the invention provides methods and materials for identifying mu3 opiate receptor agonists and antagonists.

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